Volunteer Lake Assessment Program Individual Lake Reports

ROCKYBOUND POND, CROYDON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	529	**Max. Depth (m):**	9.3	**Flushing Rate (yr^{1}):**	0.7
Surface Area (Ac.):	65	**Mean Depth (m):**	4.5	**P Retention Coef:**	0.73
Shore Length (m):		**Volume (m^{3}):**	1,166,500	**Elevation (ft):**	1055

TROPHIC CLASSIFICATION

Year	Trophic class
1989	OLIGOTROPHIC
2006	MESOTROPHIC

KNOWN EXOTIC SPECIES

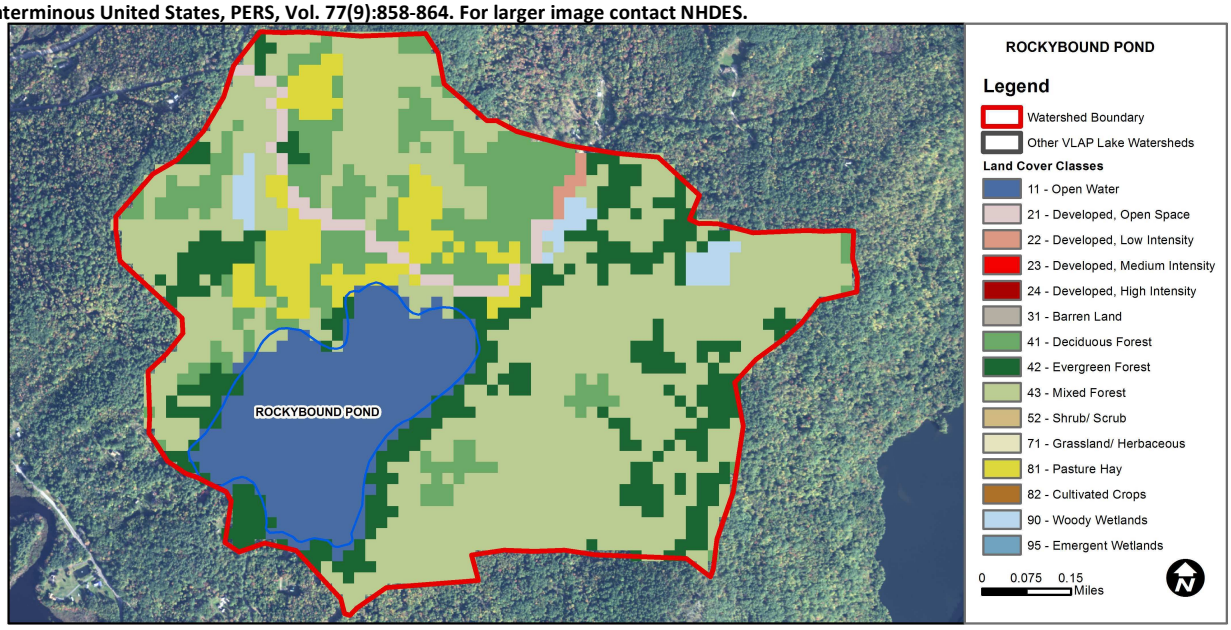
Curly Leaf Pondweed

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

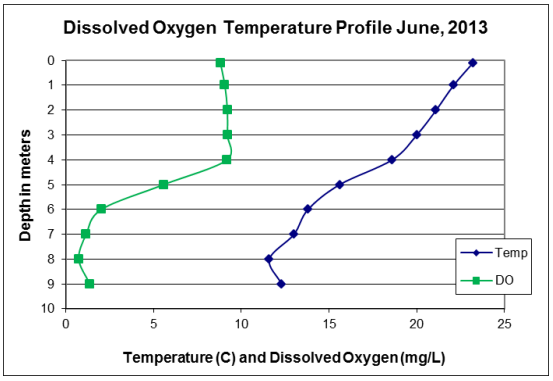


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	14.8	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	1.97	Deciduous Forest	13.46	Pasture Hay	5.88
Developed-Low Intensity	0.36	Evergreen Forest	15.12	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	46.84	Woody Wetlands	1.71
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ROCKYBOUND POND, CROYDON, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low in June and August and below the state median. Historical trend analysis indicates stable chlorophyll with low variability between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were slightly greater than the state median and historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity since monitoring began.
- **E. COLI:** E. coli levels were well below state standards for surface waters.
- **TOTAL PHOSPHORUS:** Deep spot and tributary phosphorus levels were low and stable throughout the sampling season. Hypolimnetic phosphorus was slightly elevated in August and the turbidity was also slightly elevated. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years.
- **TRANSPARENCY:** Transparency improved slightly from 2012 and was greater than the state median. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Hypolimnetic turbidity was slightly elevated in August.
- **PH:** pH decreased to undesirable levels in the Hypolimnion.
- **DISSOLVED OXYGEN:** Dissolved oxygen levels were depleted in the hypolimnion in June. As the summer progresses, decomposition of organic matter on the lake bottom uses up available oxygen in the hypolimnion. This could lead to the release of phosphorus from lake sediments.
- **PHYTOPLANKTON:** There was a healthy and diverse mix of phytoplankton.
- **RECOMMENDED ACTIONS:** Conductivity has increased in the pond since monitoring began. Work with local road agents, lake and watershed residents to identify potential causes of the increased conductivity, including road, driveway and walkway salting, septic systems, and fertilizers. Keep up the great work!



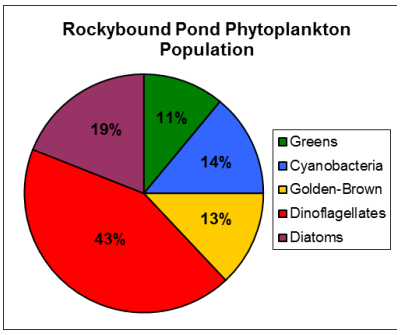


Table 1. 2013 Average Water Quality Data for ROCKYBOUND POND

Station	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m NVS	Trans. m VS	Turb. ntu	pH
Epilimnion	6.35	3.01	62.5		5	5.16	5.58	0.51	6.84
Metalimnion			62.5		8			0.76	6.61
Hypolimnion			69.1		15			1.55	5.91
W1 Public Beach/Inlet			64.0		7			0.68	6.60
W3 Homa			63.5	10	6			0.63	6.69
W5 Lewis			62.4		7			0.56	6.73
W6 Outlet			61.7		7			0.51	6.76
W8 Leslie Inlet			62.9		6			0.55	6.82

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data moderately variable.	Chlorophyll-a	Stable	Trend not significant; data show low variability.
Conductivity	Degrading	Data have significantly increased.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.